

**EXPLORATION LICENCE
EL 21/2004 - DUNDAS
TASMANIA**

**ANNUAL REPORT
FOR THE YEAR ENDED
25 June 2006**

Prepared by:

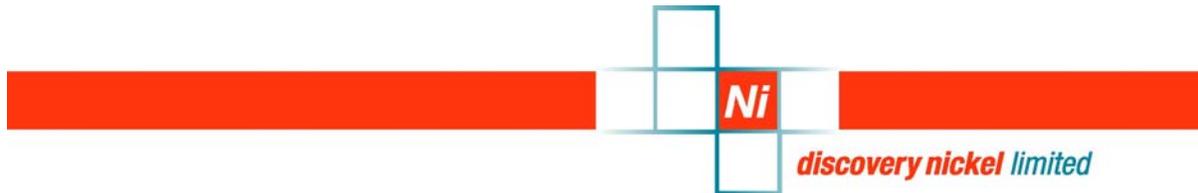
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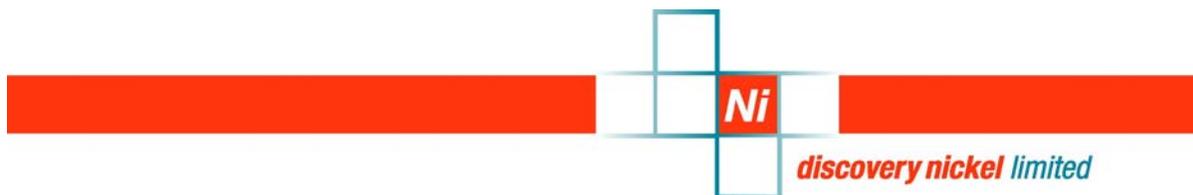
1 EXECUTIVE SUMMARY

Exploration Licence 21/2004 (Dundas), forms Discovery Nickel Limited's (DNL) Western Tasmania Nickel Project, the project previously included three separate tenements all on the west coast area of Tasmania (**Fig. 1**). All tenements hosted significant occurrences of mafic-ultramafic rocks, prospective for Ni-Cu-PGE sulphide mineralization, however work on Pieman and Maquire Harbor EL's failed to show Ni potential in mafic geochemistry and both areas were relinquished. The recent discovery of the Avebury deposit near Zeehan has raised interest in nickel exploration and confirmed the greater area including Dundas as highly permissive for Ni mineralisation.

DNL has completed a due diligence investigations and geochemical ground follow-up work over distinctive magnetic features and Cu-Ni stream sediment anomalies previously identified. The results of this investigation show EL 21/2004 – Dundas is not only prospective for magmatic nickel-copper sulphide deposits but has significant potential for hydrothermal nickel sulphide deposits, similar to the Avebury-Viking nickel deposits only 15km the west.

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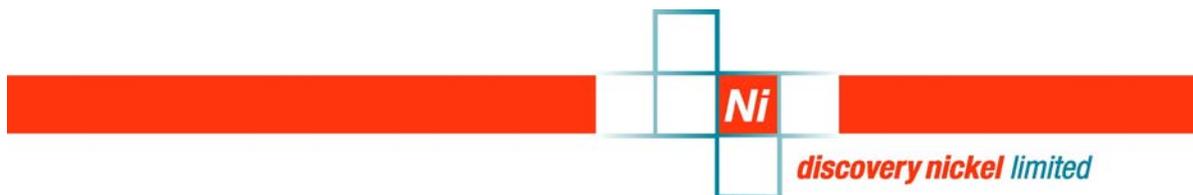
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2 INTRODUCTION

This report summarises exploration work for nickel-copper sulphide mineralisation, carried out on the EL 21-2004 Dundas for Discovery Nickel Limited, from June 25th 2005 to 24th June 2006. Exploration work included a due diligence investigation and surface geochemical follow-up work over distinctive magnetic features and Ni-Cu stream sediment anomalies identified from stream sediment and whole rock geochemical data obtained from Mines and Resources Tasmania (MRT).

EL 21/2004 – Dundas is located approximately five kilometres to the west of Zeehan and approximately 20 kilometres west of the historic port of Trial Harbour on Tasmania’s western coast (**Figure 1**).

3 TENURE AND EXPLORATION ACCESS

Tenement details for Discovery Nickel Limited’s Western Tasmania Nickel Project are included in **Table 1**. The tenure over EL 21/2004 covers mainly crown land with some areas of State Reserve and State Forest. Some minor Mining Leases also occur on EL 21/2004, and are excluded from the tenement area.

Table 1: Tenement Details

EL No.	Name	AKA	Size sq km	Application Date	Grant Date	Expenditure Commitment (2 yrs)
21/2004	Dundas	Zeehan	12	3 Feb 2004	25 Jun 2004	\$10,000

4 REGIONAL GEOLOGY

The mafic-ultramafic complexes present within DNL’s Western Tasmania Nickel Project occur within the Cambrian Dundas Trough of western Tasmania (**Fig. 2**). The Dundas Trough wraps around the Precambrian Tyennan Region of central Tasmania, and includes stratotectonic elements such as the Dundas Group and the famous Cambrian Mount Read Volcanics (which host polymetallic VHMS deposits such as Rosebery, Hellyer and Mt Lyell). The western side of the Dundas Trough contains several mafic-ultramafic bodies such as those at Heazlewood, Serpentine Hill, Trial Harbour, Dundas and McIvors Hill (Brown 1989: **Fig. 2**).

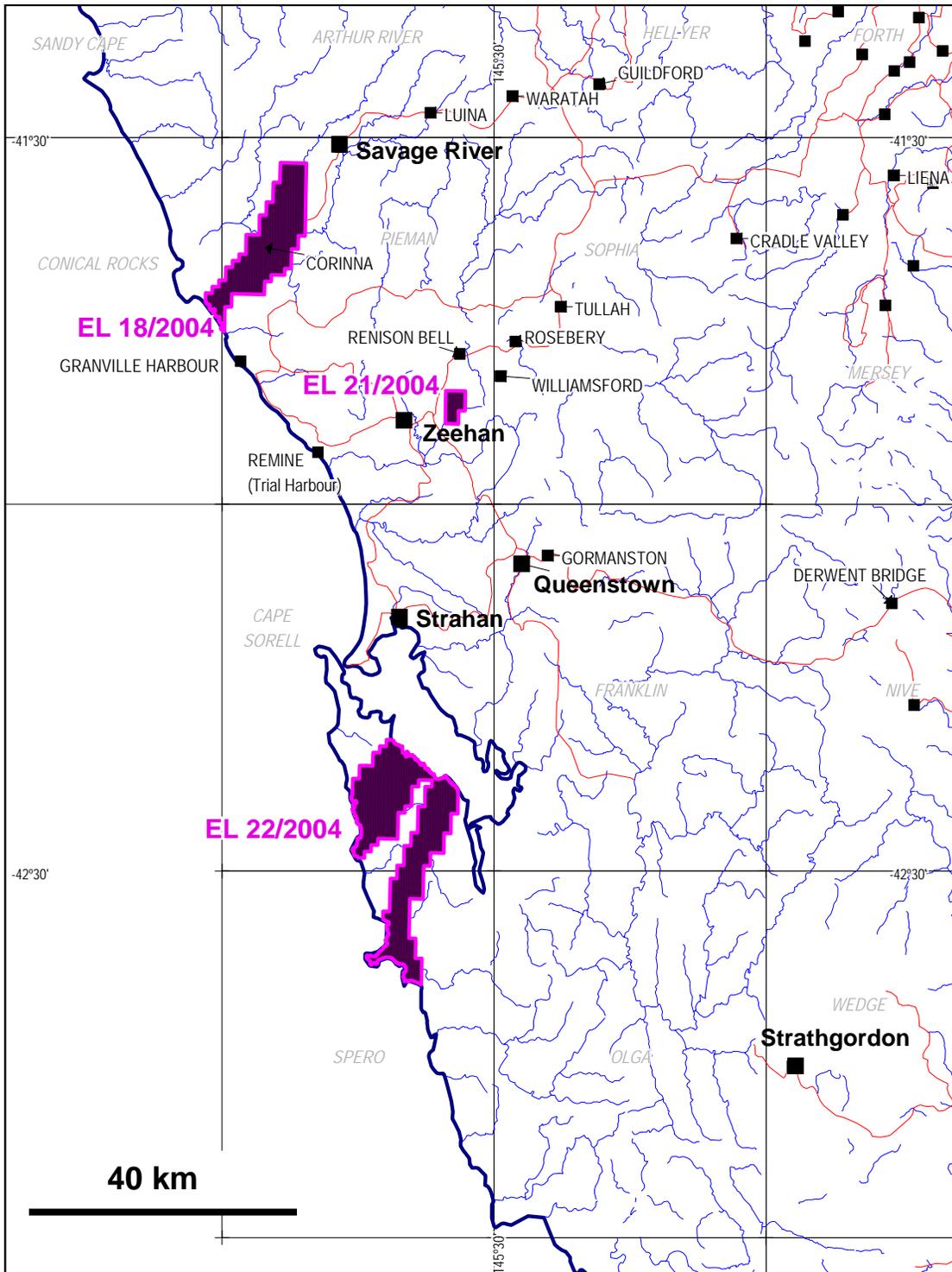


Figure 1: DNL Tenement Location Map – Western Tasmania Nickel Project

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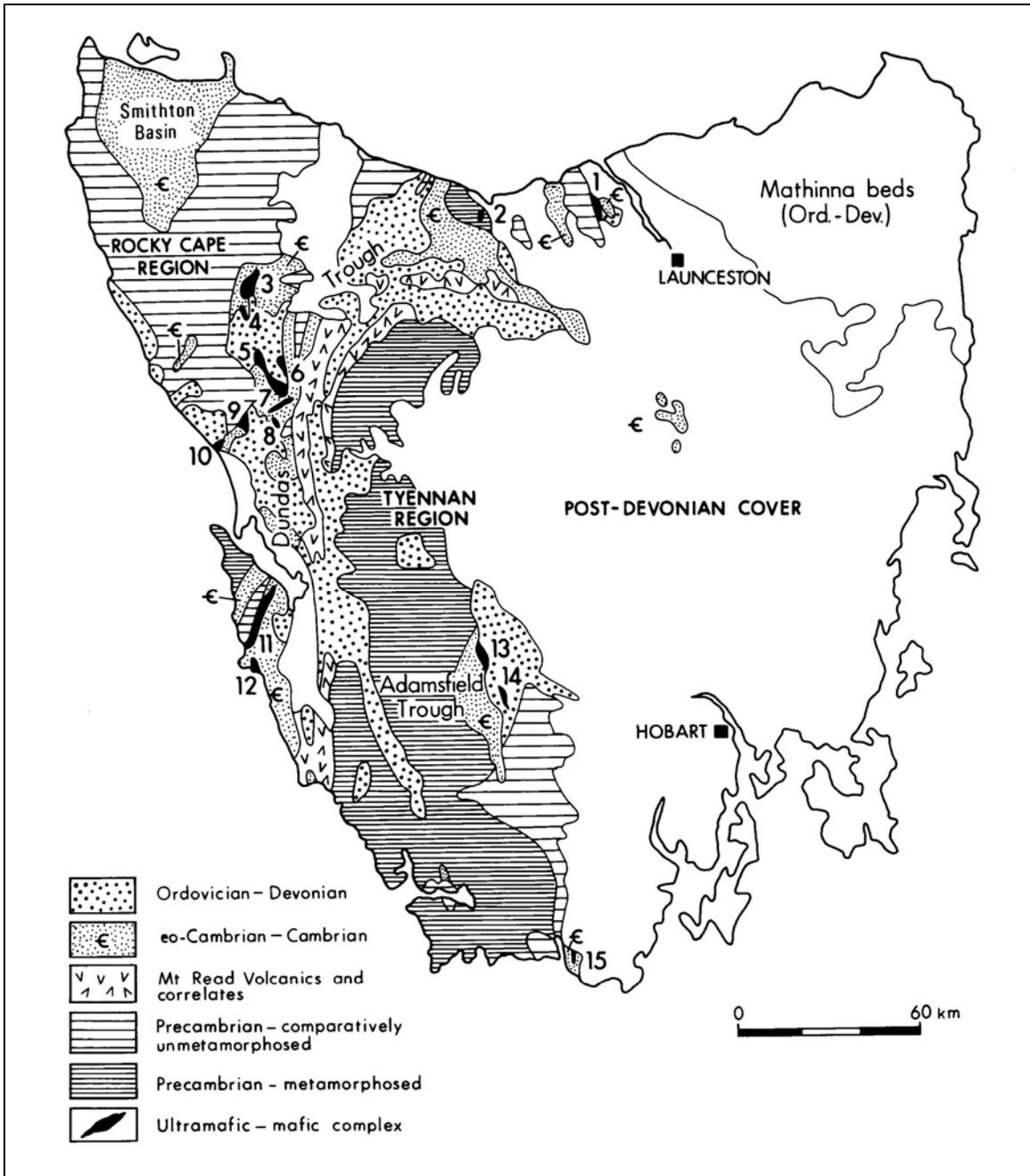
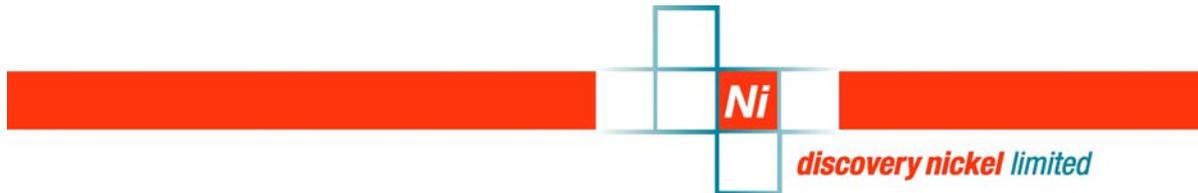


Figure 2: Regional Geology Map of Tasmania showing location of major mafic-ultramafic Complexes.
(1 = Andersons Creek, 2 = Forth, 3 = Hazlewood River, 4 = Mt Stewart, 5 = Wilson River, 6 = Huskinson River, 7 = Serpentine Hill, 8 = Dundas, 9 = Mclvors Hill, 10 = Trial Harbour, 11 = Cape Sorell, 12 = Spero Bay, 13 = Boyes Bay, 14 = Adamsfield, 15 = Rocky Boat Harbour; scanned from Brown 1989).

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Many of the mafic-ultramafic complexes in Tasmania are clearly evident on magnetic images and are defined as linear and elongate magnetic highs. These mafic-ultramafic complexes are probably Early Cambrian in age (eo-Cambrian). However, their exact age has not been accurately established. The origin of these complexes has been the topic of much debate and controversy over the past few decades, as they represent important indicators of the Palaeozoic evolution of western Tasmania.

Early researchers proposed a rift setting for the Dundas Trough. This model has the mafic-ultramafic complexes as remnants of cumulate magma chambers formed within a rift setting of continental crust. However, the presence of geochemically distinctive rocks such as boninites, indicates an oceanic arc setting. Similar lavas are found within the Tertiary to recent western Pacific island-arc systems between New Guinea and Japan. Authors such as Crawford and Berry (1988) suggest the western Tasmanian mafic-ultramafic complexes are allochthonous, and represent large over-thrust sheets derived from a forearc situated to the east. In summary, the present juxtaposition of rock successions in western Tasmania is considered by most authors to be the result of obduction of parts of a Cambrian island-arc system onto a continental terrane at the end of the Cambrian, followed by further deformation during a mid-Devonian Orogeny (e.g. Brown, 1992; Brown and Jenner, 1988; Berry and Crawford, 1988).

The ultramafic rocks in the Dundas Trough occur at several localities and are largely orthopyroxene rich. The ultramafic rocks show well developed primary magmatic layering in places, and have been subdivided into three separate groups (or magmatic phases) by Brown (1986, 1989):

- 1) Layered pyroxenite-dunite (LPD);
- 2) Layered dunite-hartzbergite (LDH);
- 3) Layered pyroxenite-peridotite with associated gabbro (LPG).

5 REGIONAL NI-CU-PGE MINERALISATION STYLES

There are four main styles of Ni-Cu-PGE mineralisation observed in Tasmania:

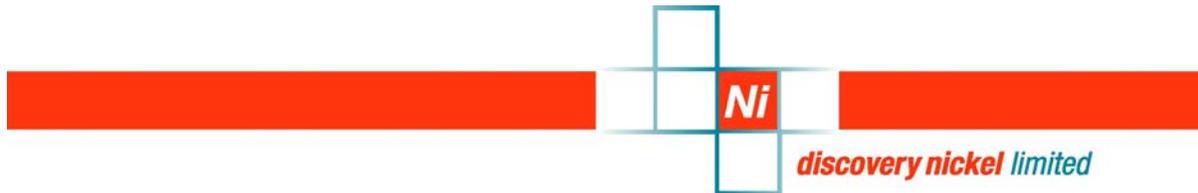
1) Os-Ir-Ru mineralisation has been recorded from various localities associated with ultramafic bodies, for example the Osmiridium occurrences at Adamsfield, Mount Stewart, Wilsons River and Heazlewood. Alloys of Os-Ir-Ru from alluvial and eluvial deposits are generally associated with the LDH rocks (Brown 1989).

2) Trace sulphides including pentlandite and millerite occur in ultramafic bodies (e.g. Trial Harbour and Serpentine Hill Complexes).

3) Cu-Ni-(+/-PGE) sulphide mineralisation occurs within Cambrian greenschist facies dolerite dykes and sills. In these bodies mineralisation is dominated by weak to heavy disseminated sulphides (e.g. Cuni). The primary magmatic sulphide assemblage of pentlandite-pyrrhotite and chalcopyrite is variably preserved. In the near surface environment, enhanced Ni grades are found where pentlandite is altered to violarite.

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4) Avebury “style” pentlandite dominant mineralisation occurs near Trial Harbour. The principal minerals found in this deposit include magnetite, pentlandite, pyrrhotite, pyrite and nickel-bearing arsenides. There is reasonable evidence for hydrothermal alteration possibly induced or enhanced by the presence of Palaeozoic granites. The apparent absence of PGE’s and chalcopyrite may indicate this mineralisation formed in response to hydrothermal processes associated with late granite emplacement.

The adjacent Cambrian volcanic and volcanoclastic rocks in the tenement area are also prospective for polymetallic VHMS style mineralisation.

6 REGIONAL-SCALE EXPLORATION RATIONALE AND TARGETING

An investigation of western Tasmania was undertaken by DNL and its consultants, to assess the potential for conventional magmatic and hydrothermal Ni-Cu sulphide mineralisation. A large number of geological, geophysical and geochemical datasets were compiled and reviewed in the GIS environment. Much of the data was sourced from the Department of Mineral Resources Tasmania (MRT). Some published reports, open-file records and data from Geoscience Australia were also evaluated. A series of images were also generated.

From this GIS investigation, a number of areas were prioritized as having the potential to host Ni-Cu-PGE mineralisation, associated with mafic-ultramafic rocks. Areas with the following features of interest were highlighted:

- Significant magnetic anomalies suggesting the presence of magnetically active mafic-ultramafic rocks, at or near surface.
- Areas of known mafic-ultramafic occurrences;
- Areas of known mafic-ultramafic occurrences with high MgO (>12 wt%);
- Areas showing anomalous Cu-Ni stream geochemistry.

A number of priority areas were highlighted from this regional targeting stage and three tenements, including Dundas were applied for in early 2004.

7 TENEMENT-SCALE EXPLORATION RATIONALE AND TARGETING

The aim in applying for the EL 21/2004 - Dundas tenement was to target discrete magnetic anomalies for “Avebury-style” nickel mineralisation related to hydrothermal alteration in mafic/ultramafic phases, close to Devonian granitoids. The magnetic anomaly in this area (**Fig. 3**) is coincident with a large body of serpentinite, in an area of tin mineralisation related to fluids from Devonian granite at depth. The magnetic anomaly may relate to serpentinisation of ultramafic and/or to hydrothermal alteration of the ultramafic body associated with fluids from the Devonian granites. As with the Avebury nickel mineralisation, there is the possibility of nickel mineralisation associated with hydrothermal alteration of pre-existing mafic/ultramafic intrusions.

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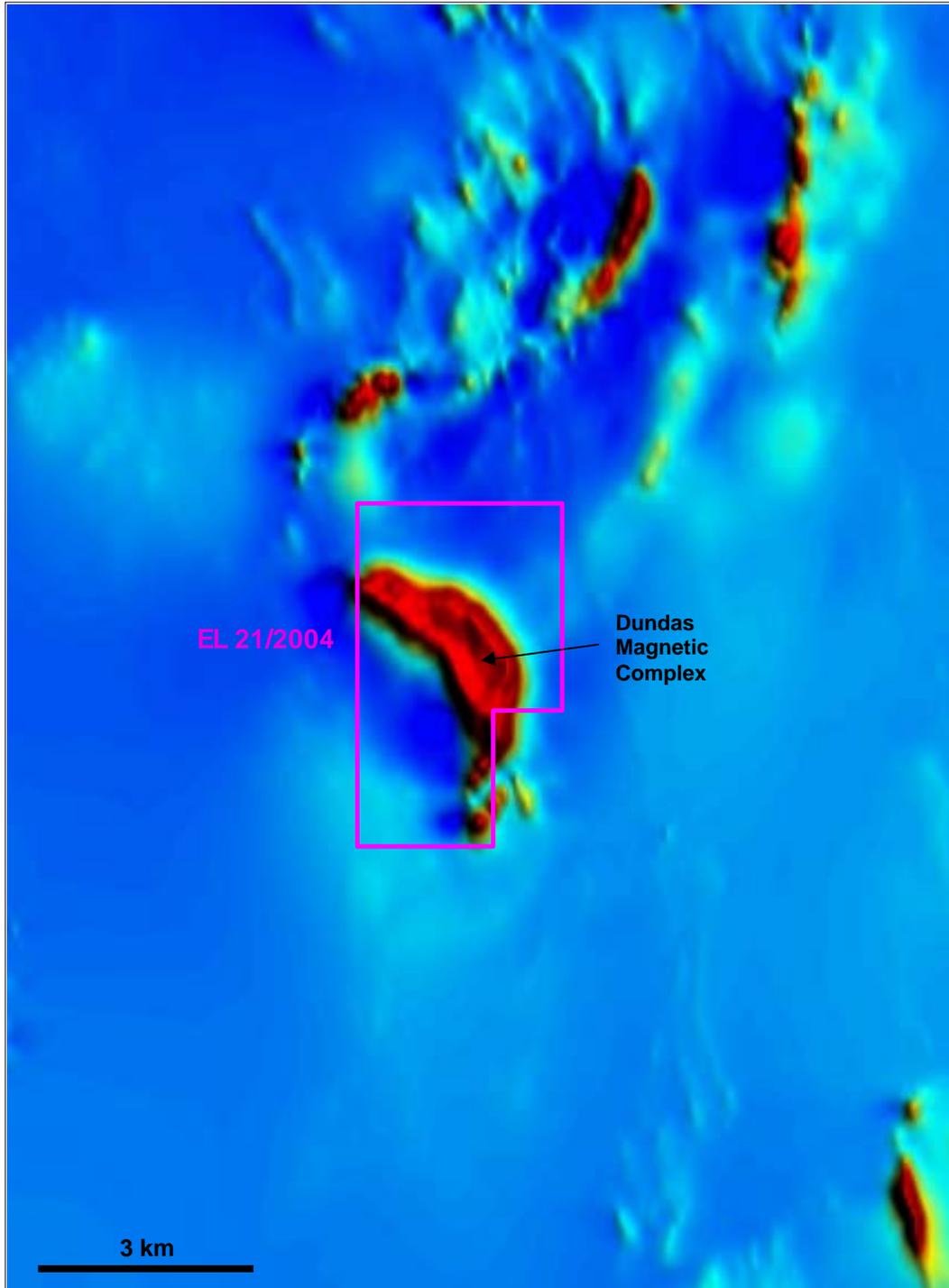
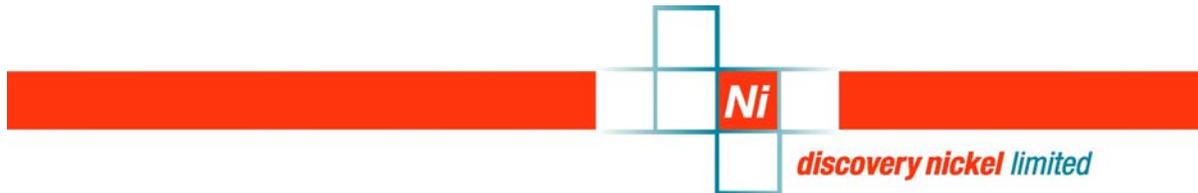


Figure 3: Dundas Area Magnetic Image

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8 PREVIOUS WORK

Overall, a moderate amount of exploration has been carried out over EL 21/2004 - Dundas. However, this work has been directed towards discovery of VHMS polymetallic systems. No specific exploration targeting nickel sulphides has been completed over the area.

9 EXPLORATION WORK COMPLETED AND RESULTS

9.1 Introduction

After completing a regional evaluation of western Tasmania using MRT data (Geology, Geochemistry, Geophysics, etc.) and previous companies exploration reports, DNL applied for three tenements containing mafic-ultramafic occurrences permissive to Ni-Cu-PGE sulphide mineralisation. Then the MRT surface geochemical data were processed (leveled by sampling technique) by DNL, and a series of images relating to the distribution of nickel and copper anomalism across western Tasmania were generated. These Ni and Cu distribution maps were then compared to aeromagnetic datasets of western Tasmania, in which mafic and ultramafic rocks appear as relatively high magnetic intensity anomalies. A brief field visit was conducted in 2004, in order to locate the mafic-ultramafic rocks on the ground and collect rock chip samples for a more focused geochemical analysis.

9.2 MRT Stream Sediment Anomalies

Approximately 15,000 stream sediment samples were acquired from MRT. These data were processed and merged with pre-existing MRT data to produce a stream-sediment geochemical coverage for western Tasmania. Samples with Ni and Cu assays were levelled (on the basis of recorded sample mesh size) and reprocessed, and images of each element were created. Analysis of these data uncovered a prominent copper anomaly in the northern part of the EL 21/2004 - Dundas tenement area but no significant nickel anomalism was identified (**Fig. 4**). Further exploration work is needed in order to establish the cause of this copper anomaly.

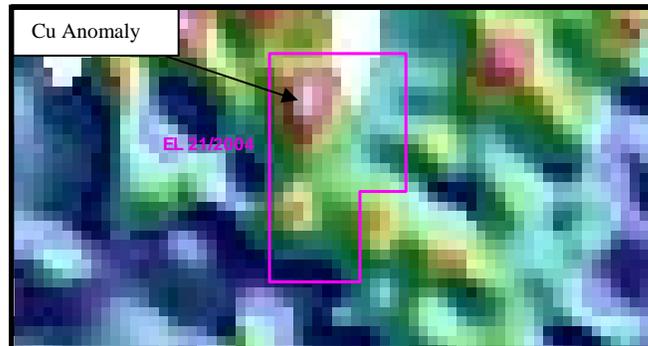


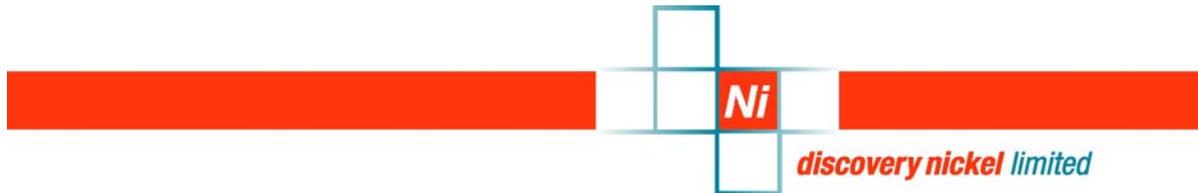
Figure 3: Dundas Area Cu levelled image.

9.3 Geochemical Sampling

A reconnaissance field trip was made to the three tenements in 2004 by DNL, for the purpose of taking fresh rock samples for geochemical analysis. A total of 46 samples were collected from the three areas. The samples were assayed by ALS for a suite of major, minor and trace elements and interpreted by Nickel Specialist Jeff Foster. There were some minor problems evident with some of the recorded element levels (as compared with the standard submitted), but overall, the data are largely within acceptable ranges (**Appendix 1**).

Five samples (D1-S, D2-S, D4-S, D5-S & D6-S) were collected from an ultramafic body to the west of Zeehan within the EL21/2004 - Dundas tenement. Of these, two samples appear relatively unaltered. The unaltered samples are characterised by very high MgO (~ 38 wt %) and very low Al₂O₃ (~ 0.25 wt %), CaO (~ 0.02 wt%) and TiO₂ (BDL). These features are unusual and quite distinct from olivine cumulates associated with komatiitic to picritic liquids. The near total absence of Al₂O₃, CaO and TiO₂ would require a parental melt with low concentrations of these elements and thus a refractory melt source region.

Boninites are high MgO and SiO₂ rich melts derived from re-enriched refractory lithospheric mantle. The re-enrichment of the source region is particularly evident in the REE patterns for these rocks, with variably enriched LREE's and HREE's resulting in 'U' shaped profiles on a chondrite normalised spidergram. The Dundas samples are highly enriched in the LREE's and thus the overall geochemical characteristics of these rocks are consistent with derivation from a boninitic like parental melt.



10 CONCLUSIONS

10.1 Interpretation of Whole Rock Analysis

From the analysis of the whole rock it was interpreted that the geochemical characteristics of the mafic rocks found throughout the survey areas it is interpreted that:

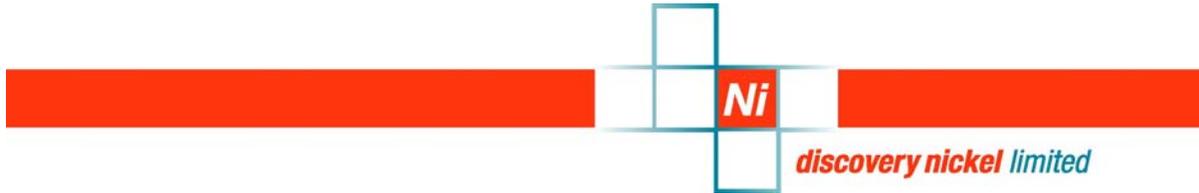
1. The ultramafic rocks have geochemical characteristics similar to cumulates formed from boninitic like melts.
2. There is no significant evidence for concurrent crustal contamination and chalcophile element depletion.
3. There is no evidence of any significant chalcophile element enrichment associated with the presence of primary magmatic sulphides.
4. The rocks analysed are consistent with formation in a volcanic arc environment.

10.2 Tectonic Setting

The geochemical data described above are broadly consistent with a series of lavas formed within an arc environment. Similar lavas are found within the Tertiary to recent Western Pacific island-arc system between New Guinea and Japan.

The present juxtaposition of rock successions in Western Tasmania is considered to be the result of obduction of parts of a Cambrian island-arc system onto a continental terrane at the end of the Cambrian, followed by further deformation during a mid-Devonian Orogeny (e.g. Brown, 1992; Brown and Jenner, 1988; Berry and Crawford, 1988).

Tectonic settings of this type are not favorable to the formation of giant magmatic Ni-Cu+/-PGE systems. However, this tectonic setting (overprinting mid-Devonian Orogeny and associated granite suite development) is favorable to the formation of hydrothermal related "Avebury-style" nickel sulphide mineralisation. Therefore, further exploration in this area should be concentrated on this style of mineralisation and not magmatic Ni-Cu+/-PGE sulphide mineralisation.



11 EXPENDITURE

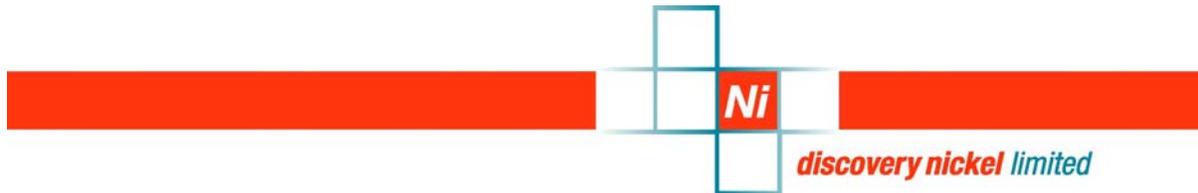
Expenditure on DNL's EL 21/2004 – Dundas tenement for the year ending on the 25th of June 2006 totaled \$ 6479.37 (**Table 2**).

Table 2: EL 21/2004 – Dundas expenditure for the year ending 25th of June 2006.

Details	Expenditure for year 2 (\$)
Geological Consulting	\$1818.18
DNL Salaries	\$1,414.91
Travel costs	\$16.48
	Sub Total
	\$3249.57
Administration costs (15%)	\$324.95
	Total
	\$3574.52

12 FUTURE EXPLORATION PROGRAM

DNL plans to complete a follow up ground investigation and geochemical analysis of the copper anomaly uncovered in the EL 21/2004 – Dundas tenement. Then if this geochemical anomaly holds up to geological scrutiny, DNL plans to cover this area with a ground EM survey in order to define drill targets.

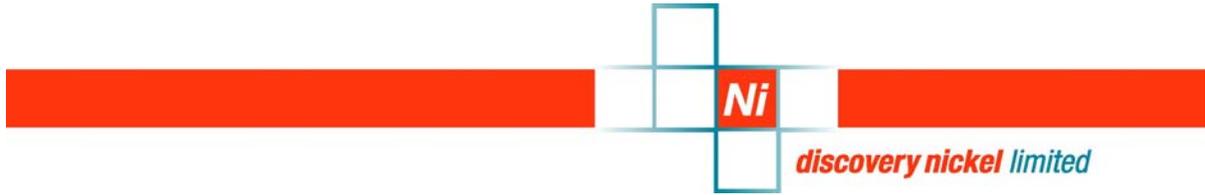


13 REFERENCES

- Berry R. F. and Crawford A. J. (1988) The tectonic significance of the Cambrian allochthonous mafic-ultramafic complexes in Tasmania. *Aust. J. Earth Sci.* 35: 161-171.
- Brown A. V. (1986) Geology of the Dundas-Mt Lindsay-Mt Youngbuck region. *Bull. Geol. Surv. Tasm.* 62.
- Brown A. C. (1989) Eo-Cambrian – Cambrian. *In Burrett C. F. and Martin E. L. (eds) Geology and Mineral Resources of Tasmania.* Geol. Soc Aust. Spec. Pub. 15: 47-83.
- Brown A. V. (1992) Platinum group elements and their host rocks in Tasmania: a summary review. *Tasmania's development Environment.* *Bull. Geol. Surv. Tasm.* 70: 48-55.
- Brown A. V. and Jenner G. A. (1988) Tectonic implications of the reinterpretation of Eocambrian-Cambrian mafic volcanic and associated ultramafic rocks in western Tasmania, *In Turner N. J (ed). The geology and evolution of the latest Precambrian to Cambrian rocks in the western Tasmania terrane.* Geol Soc. Aust (Tas Div). Hobart.

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